



12DL8

TWIN DIODE—POWER TETRODE

9-PIN MINIATURE TYPE

For use in automobile radio receivers
operating directly from 12-volt storage batteries

12DL8

GENERAL DATA

Electrical:

Heater[•], for Unipotential Cathodes:

Voltage range. 10.0 to 15.9 dc volts

*This voltage range is on an absolute basis. For longest
life, it is recommended that the heater be operated with-
in the voltage range of 11 to 14 volts.*

Current (Approx.) at

12.6 volts 0.55 amp

Direct Interelectrode Capacitances:^o

Tetrode Unit:

Grid No.2 to plate 14 $\mu\mu\text{f}$ Grid No.2 to cathode, grid No.1,
and heater 12 $\mu\mu\text{f}$ Plate to cathode, grid No.1, and
heater 1.3 $\mu\mu\text{f}$

Diode Units:

Diode plate No.1 to diode
cathode and heater 1.6 $\mu\mu\text{f}$ Diode plate No.2 to diode
cathode and heater 1.6 $\mu\mu\text{f}$ Diode plate No.1 to diode plate
No.2 0.03 $\mu\mu\text{f}$ Tetrode grid No.2 to diode plate No.1. . . 0.02 max. $\mu\mu\text{f}$ Tetrode grid No.2 to diode plate No.2. . . 0.006 max. $\mu\mu\text{f}$ Characteristics, Class A₁ Amplifier with 12.6 Volts on Heater
(Tetrode Unit):

Plate Voltage. 12.6 volts

Grid-No.2 (Control-Grid) Voltage:

Developed across a 2.2-megohm
resistor -0.5 volt

Grid-No.1 (Space-Charge-Grid)

Voltage. 12.6 volts

Plate Resistance (Approx.) 480 ohms

Amplification Factor, Grid No.2

to Plate 7.2

Transconductance, Grid No.2 to Plate . . 15000 μmhos

Plate Current. 40 ma

Grid-No.1 Current. 75 ma

Mechanical:

Operating Position Any

Maximum Overall Length 2-5/8"

Maximum Seated Length 2-3/8"

Length, Base Seat to Bulb Top (Excluding tip). . . 2" $\pm$ 3/32"

Maximum Diameter 7/8"

Dimensional Outline. See General Section

Bulb T6-1/2

^{•, o}: See next page.

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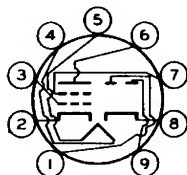


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Base Small-Button Noval 9-Pin (JETEC No.E9-1)
 Basing Designation for BOTTOM VIEW 9HR

Pin 1—Plate of Diode Unit No.2	Pin 6—Plate of Tetrode Unit
Pin 2—Cathode of Tetrode Unit	Pin 7—Grid No.2 of Tetrode Unit
Pin 3—Grid No.1 of Tetrode Unit	Pin 8—Cathode of Diode Units No.1 & No.2
Pin 4—Heater	Pin 9—Plate of Diode Unit No.1
Pin 5—Heater	



TETRODE UNIT — AUDIO DRIVER

Maximum Ratings, Design-Center Values Except as Noted:

PLATE VOLTAGE.	30 max.	volts
GRID-No.2 (CONTROL-GRID) VOLTAGE:		
Negative bias value.	-20 max.	volts
GRID-No.1 (SPACE-CHARGE-GRID) VOLTAGE		
(Absolute maximum)	16 [■] max.	volts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	30 max.	volts
Heater positive with respect to cathode	30 max.	volts

Typical Operation with 12.6 Volts on Heater:

Plate Voltage.	12.6	volts
Grid-No.2 Voltage:		
Obtained by rectification through 2.2-megohm resistor.	-2	volts
Peak AF Grid-No.2 Voltage:		
Obtained from 100000-ohm source.	2.5	volts
Grid-No.1 Voltage.	12.6	volts
Zero-Signal Plate Current (Approx.).	40	ma
Max.-Signal Plate Current.	8	ma
Grid-No.1 Current.	75	ma
Load Resistance.	800	ohms
Total Harmonic Distortion.	10	%
Max.-Signal Power Output	40	mw

Maximum Circuit Values:

Grid-No.2-Circuit Resistance	10 max.	megohms
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DIODE UNITS — Two

Maximum Ratings, Design-Center Values:

Values are for Each Unit

PLATE CURRENT.	5 max.	ma
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●, ○, ■: See next page.



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TWIN DIODE—POWER TETRODE

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode . . . 30 max. volts
Heater positive with respect to cathode . . . 30 max. volts

Characteristics with 12.6 Volts on Heater:

Plate Current for plate volts = 10. 3 ma

- Operation of heater in series with other heaters is not recommended.
- without external shield.
- Under no circumstances should this absolute value be exceeded.

OPERATING CONSIDERATIONS

The *maximum ratings* in the tabulated data for the 12DL8, except the rating for grid-No.1 (space-charge-grid) voltage, are working design-center maximums established according to the standard design-center system of rating electron tubes. Tubes so rated will give satisfactory performance in storage-battery-operated equipment provided the following stipulations are observed:

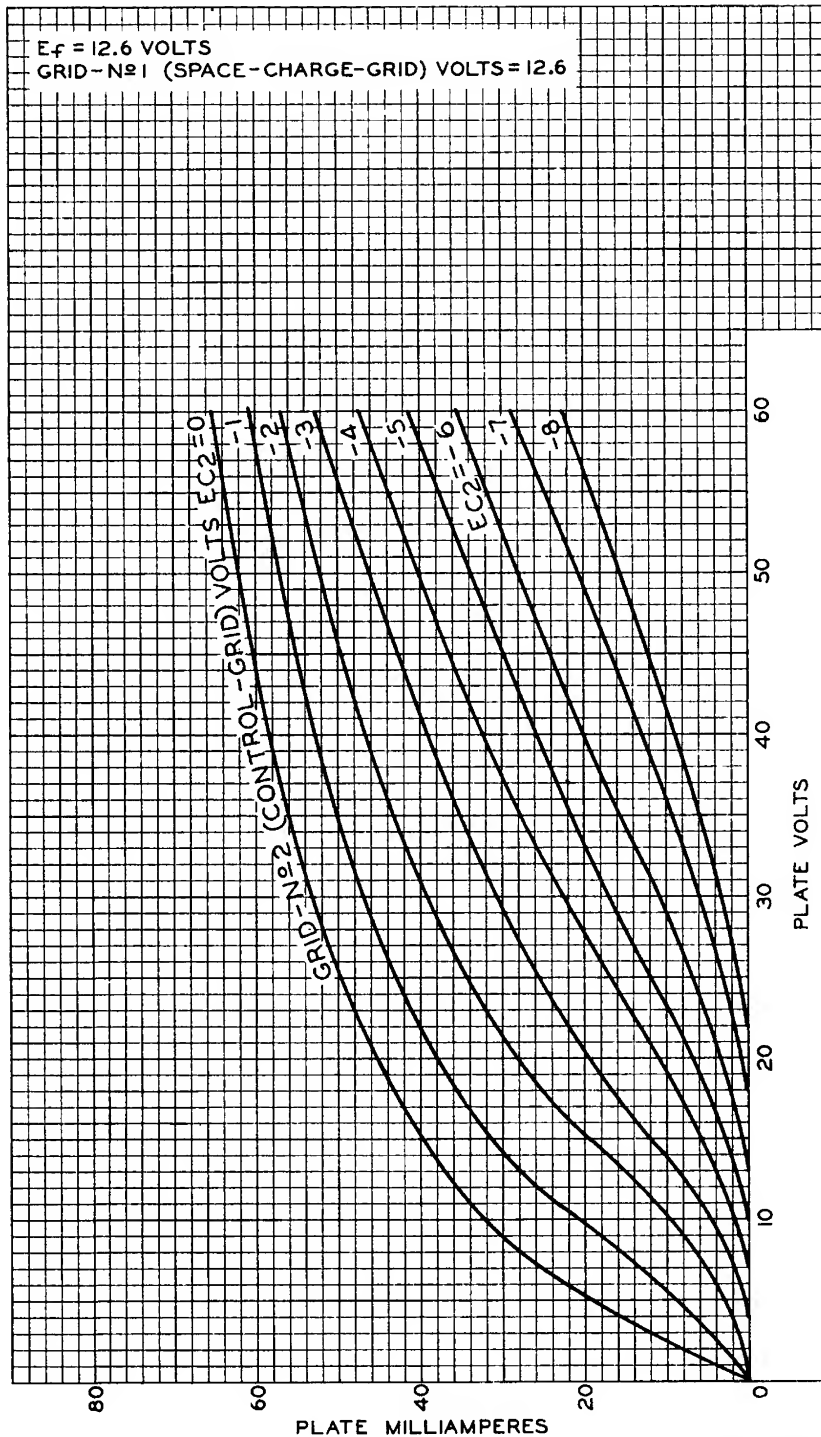
In the case of storage-battery-with-charger supply or similar supplies, the normal battery-voltage fluctuation may be as much as 35 per cent or more. This fluctuation imposes severe operating conditions on tubes. Under these conditions, the equipment should be designed so that 90 per cent of the design-center maximum value of plate voltage is never exceeded for a battery terminal potential of 13.2 volts. Although the operating voltages of the 12DL8 in this service will, at times, exceed the design-center maximum values, satisfactory performance with probable sacrifice in life will be obtained.

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AVERAGE PLATE CHARACTERISTICS TETRODE UNIT

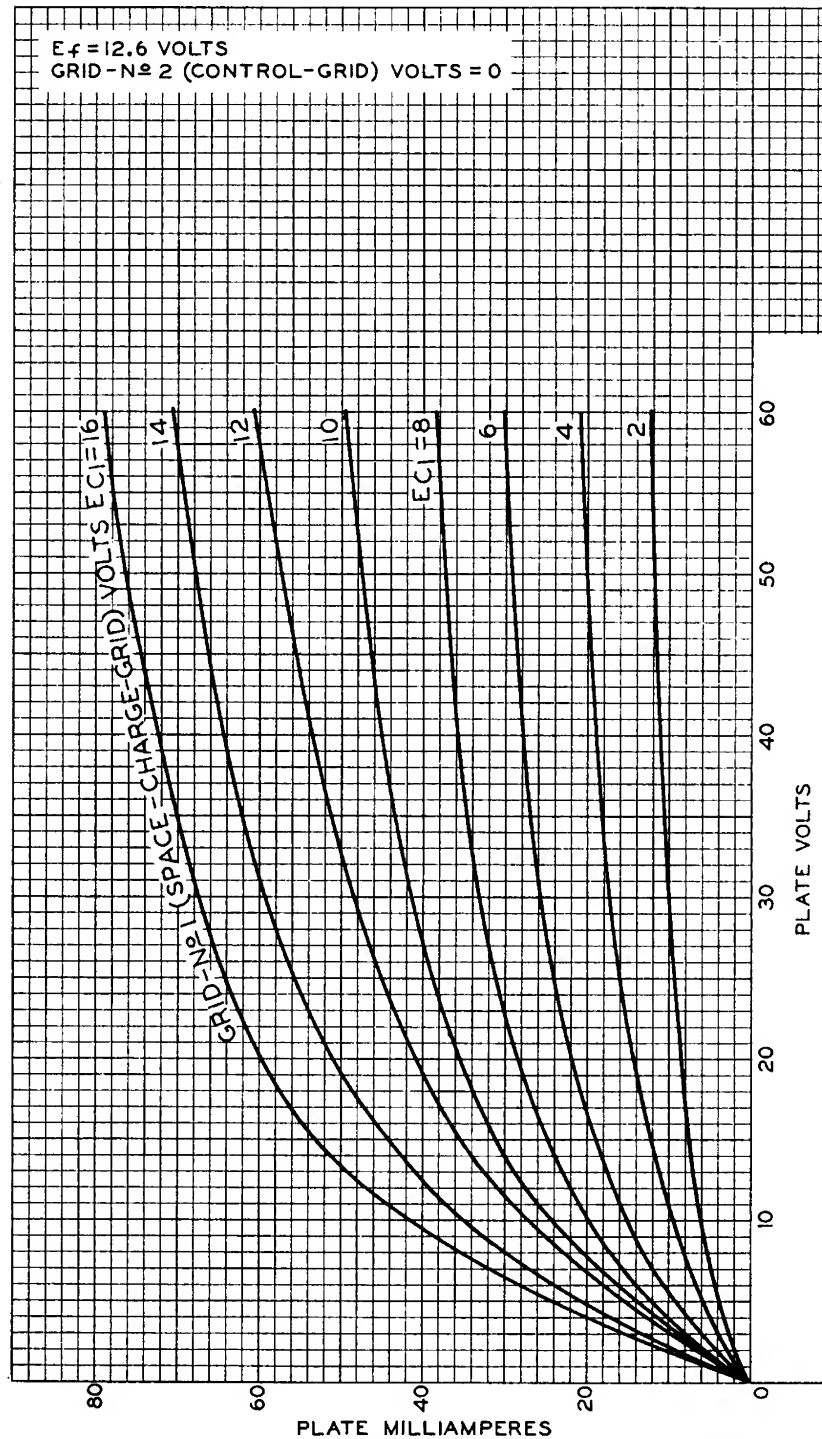




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ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-9423